MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER BUREAU

GROUNDWATER DISCHARGE GENERAL PERMIT
2215-05-6

This general permit is issued under the provisions of Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, being Sections 324.3101 through 324.3119 of the Compiled Laws of Michigan, and the Administrative Rules promulgated thereunder. This general permit does not relieve the discharger from obtaining and complying with any other permits required under local, state, or federal law.

Authorization:	**Rule 2215**
Type of Operation:	**Vehicle Wash Open to the Public, Operating as of April 1, 2001**
Discharge Category:	**Washwater With Additives (Flow less than 3,000 gallons per day)**
Type of Wastewater:	**Process**
Method of Disposal:	**Groundwater or Ground**
Issue Date:	**April 1, 2005**
Expiration Date:	**April 1, 2010**

Authorization to Discharge in accordance with the limitations and conditions as set forth in this general permit as authorized pursuant to **R 323.2215**.

The Michigan Department of Environmental Quality (Department) has determined that vehicle wash facilities open to the public, operating as of April 1, 2001, and discharging less than 3,000 gallons per day of only washwater with additives into the groundwater or onto the ground, are appropriately controlled by this general permit. **This permit does not cover the washing of vehicles in garages that do maintenance and repair activities**. Pursuant to this general permit, a discharge may begin as soon as the conditions of the general permit have been met.

In accordance with Section 324.3122 of the Michigan Act, the permittee shall make payment of an annual permit fee to the Department for each December 15 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by March 1 for notices mailed by January 15. The fee is due no later than 45 days after receiving the notice for notices mailed after January 15. Fees paid in accordance with the Michigan Act are not refundable.

This general permit supersedes all Permits and Exemptions for discharges of Washwater With Additives issued by the Department to facilities with the same or substantially similar types of operation.

All construction, maintenance, operations, and monitoring of this facility must comply with the conditions set forth in this general permit by the Department. Failure to comply with the terms and provisions of this general permit may result in civil and/or criminal penalties as provided in Part 31.

James R. Janiczek, Chief,
Groundwater Permits Unit
Water Bureau
Michigan Department of Environmental Quality

A. General Permit Conditions

1. No discharge can legally occur until the discharger requests a certificate of coverage on a form approved by the Department and obtains a certificate of coverage authorizing the discharge.

2. The discharge shall be less than 3,000 gallons per day of washwater with additives. Washwater with additives is defined as wastewater, which results from cleaning operations, to which detergents, surfactants, or chemicals other than volatile organics have been added to enhance, accelerate or improve the cleaning process.

3. The facility must have been operational and discharging by April 1, 2001.

4. The discharge shall meet the conditions of Rule 2204(2) of the Part 22 Groundwater Quality Rules of Part 31.

5. If the discharger exceeds the standards of Rule 2222 in the groundwater, the discharger shall follow the compliance steps specified in Rule 2227, which is included as Attachment I.

6. The source of the washwater shall be from a municipal water supply, water meeting state or federal criteria for use as potable water, water meeting the standards of Rule 2222 or water approved by the Department as meeting the conditions of Rule 2204.

7. Detergents, surfactants or other additives must be used in accordance with manufacturer's directions and only for the intended purpose described in the manufacturer's directions. Products containing volatile organic compounds shall not be used. Signs shall be posted at the facility prohibiting the use of products that contain volatile organic compounds, such as engine degreasers, parts cleaners and other similar products.

8. This general permit does not cover the washing of vehicles in garages that do maintenance and repair activities.

9. Effluent shall not be applied within 100 feet of property lines unless the Department specifically approves a lesser distance. For facilities that spray irrigate wastewater, the discharge of washwater with additives shall be stopped immediately if aerosol drift is detected beyond the isolation distance specified above.

10. The discharger shall maintain a log on-site, detailing the daily volume of washwater discharged under this authorization. The log shall be available for inspection and submitted to the Department upon request. Records shall be retained for a period of three years unless otherwise required by the Department. The Department may approve alternative monitoring frequencies.

11. The discharger shall install a minimum of three groundwater monitor wells in a triangular pattern immediately adjacent to the discharge area according to the installation procedures included in Attachment II. Two of the wells shall be installed along the most probable hydraulically downgradient sides of the discharge location. The third well shall be installed along the most probable hydraulically upgradient side of the discharge location. The wells shall be drilled ten feet into the uppermost saturated formation, and three foot well screens shall be set within the upper five to ten feet of the uppermost saturated formation. The wells shall be constructed and developed so that accurate

static water levels and representative samples of groundwater can be collected. The elevations of the top of the well casings shall be surveyed, and referenced to USGS datum.

12. If a monitor well network does not exist at the facility the discharger shall install a monitor well network in accordance with the following schedule:
    a. Within 60 days of issuance of the Certificate of Coverage the discharger shall submit for review and approval a work plan for the installation of a monitoring well network.
    b. Install monitor wells as described in the approved work plan within 90 days of receiving approval.
    c. Within 120 days of completion of the monitor well network submit for review and approval a report detailing the installation of the network.

13. The groundwater monitoring wells shall be sampled semi-annually, during February and August, for the substances listed in Tables I, II and III (attached). In addition, the static water levels in the groundwater monitoring wells shall be measured and elevations converted to USGS datum. The discharger, using the measured groundwater elevation data shall prepare groundwater contour maps. Groundwater sampling shall be conducted according to the procedures outlined in Attachment II of this general permit. If after two years of semi-annual sampling (four sampling events), the permittee demonstrates the discharge meets the standards of Rule 2222, the discharger may petition the Department for a reduction in sampling frequency and/or substances to be analyzed.

14. The permittee shall submit self-monitoring data monthly on the Department of Environmental Quality's Compliance Monitoring Report (CMR) forms for each calendar month of the authorized discharge period to the following address:

    NMS-CMR Data Entry-Groundwater
    Water Bureau
    Michigan Department of Environmental Quality
    P.O. Box 30273
    Lansing, Michigan 48909-7773

    The forms shall be postmarked no later than the 15th day of the month following each month of the authorized discharge period(s).

    Electronic Environmental Discharge Monitoring Reporting (e2-DMR) System participants shall submit self-monitoring data for each month of the authorized discharge period(s). The electronic forms shall be submitted to the department no later than the 25th day of the month following each month of the authorized discharge period(s).

    Alternative Daily Discharge Monitoring Report formats may be used if they provide equivalent reporting details and are approved by the Department. For information on the electronic submittal of this information, contact the Department or visit the *e2-Reporting* website @ https://secure1.state.mi.us/e2rs/ - click on "about e-DMR" to download the Facility Participation Package.

15. All treatment or control facilities or systems installed or used to achieve compliance with this general permit shall be maintained in good working order and operated as efficiently as possible.

16. The discharge of treated wastewater shall only be on property owned by the discharger unless the discharger has written authorization from the landowner for such a discharge.

B. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall submit to the Department 30 days prior to the actual transfer of ownership or control a written agreement between the current permittee and the new permittee containing: 1) the legal name and address of the new owner; 2) a specific date for the effective transfer of permit responsibility, coverage and liability; and 3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittee is proposing changes in operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

C. Change or Modification of Treatment or Discharge

If at any time the discharge fails to meet a qualifying condition of this permit, the general permit and any specific certificate of coverage no longer applies, and the discharger must obtain an appropriate authorization.

D. By-Passing

Any diversion from or bypass of treatment facilities is prohibited, except where unavoidable to prevent loss of life, personal injury, or severe property damage. The discharger shall immediately notify the Department of any such occurrence by telephone at 1-800-292-4706. Such notice shall be supplemented by a written report within ten days detailing the cause of such diversion or bypass and the corrective actions taken to minimize adverse impact and eliminate the need for future diversion or bypass.

E. Cessation of Discharge-Related Activities

If all or any portion of the authorized treatment facilities and discharge areas are intended to be eliminated, the discharger shall comply with the requirements of R 323.2226.

F. Reporting Requirements

Except as provided in Sections A and D, all notices, reports, and other submissions required by and pursuant to this general permit shall be submitted to:

Groundwater Permits Unit
Water Bureau
Department of Environmental Quality
P.O. Box 30273
Lansing, Michigan 48909 Telephone: 517-373-8148

G. Spill Notification

The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwater of the state, unless the permittee has determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated in the certificate of coverage, or if the notice is provided after regular working hours call the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706 (calls from out-of-state dial 1-517-373-7660).

Within ten (10) days of the release, the permittee shall submit to the Department a full written explanation as to the cause of the release, the discovery of the release, response (clean-up and/or recovery) measures taken, and preventative measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

H. Duty to Comply

All discharges authorized herein shall be consistent with the terms and conditions of this permit and the facility's certificate of coverage (COC). The discharge of any pollutant identified in this permit and/or the facility's COC more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit and the facility's COC. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit or the facility's COC constitutes a violation of the Michigan Act and constitutes grounds for enforcement action; for COC termination, revocation and reissuance, or modification; or denial of an application for permit or COC renewal.

I. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Department, as required by Sections 3110 and 4104 of the Michigan Act.

J. Power Failures

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either:

a. provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit; or
b. upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

K. Waste Treatment Residues

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit or other pollutants) removed from or resulting from treatment or control of wastewaters, shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. These laws may include, but are not limited to, the Michigan Act, Part 31 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

L. Right of Entry

The permittee shall allow the Department, any agent appointed by the Department, upon the presentation of credentials:

a. to enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and
b. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect process facilities, treatment works, monitoring methods and equipment regulated or required under this permit; and to sample any discharge of pollutants.

M. Availability of Reports

Except for data determined to be confidential under Rule 2128 (Rule 323.2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. Effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Sections 3112, 3115, 4106 and 4110 of the Michigan Act.

N. Civil and Criminal Liability

Except as provided in permit conditions on "Bypass", nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond the permittee's control, such as accidents, equipment breakdowns, or labor disputes.

O. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

P. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits or approvals as may be required by law.

Attachments

ATTACHMENT I

R 323.2227 Discharger compliance responsibilities.
Rule 2227. (1) If, during the term of an authorization to discharge granted under this part, monitoring data indicate that a limit on the concentration of a substance in groundwater or effluent has been exceeded, then a discharger shall do all of the following:
(a) Notify the Department, by written instrument within seven calendar days of making the determination, that a limit has been exceeded. The notification shall include all of the following information:
(i) The name of any substance for which a limit was exceeded.
(ii) The concentration at which the substance was found.
(iii) The location or locations at which the limit was exceeded.
(b) Within 14 days of making the determination that a limit has been exceeded, resample the monitoring location at which the limit was exceeded as specified in a permit issued under these rules.
(c) Within 60 calendar days of making the determination that a limit has been exceeded, submit a report that includes all of the following information:
(i) Results of the confirmation sampling.
(ii) An evaluation of the cause for the limit being exceeded and the impact of that event to groundwater.
(iii) A proposal detailing steps taken or to be taken to prevent recurrences.
(d) Take actions as may be required by the Department under subrule (2) of this rule.

(2) If the Department determines that a limit on the concentration of a substance in the effluent or groundwater has been exceeded, then the Department may require the discharger to undertake one or more of the following activities:
(a) Change the monitoring program, including increasing the frequency of effluent monitoring or groundwater sampling, or both.
(b) Develop and implement a groundwater monitoring program if one is not in place. A groundwater monitoring program established under this provision shall comply with R 323.2223(2).
(c) If the discharge is in a designated wellhead protection area**,** assess the affects of the discharge on the public water supply system.
(d) Review the operational or treatment procedures, or both, at the facility.
(e) Define the extent to which groundwater quality exceeds the applicable criteria established by the Department under section 20120a(1)(a) of the act, if applicable, or under section 21304(a) of the act, if applicable.
(f) Revise the operational procedures at the facility.
(g) Change the design or construction of the wastewater operations at the facility.
(h) Initiate an alternative method of waste treatment or disposal.
(i) If the standard for the substance is established by R 323.2222(5), reduce or eliminate use of the substance.
(j) Close the facility or end the discharge that resulted in the applicable standard being exceeded.
(k) Remediate contamination to comply with the terms of section 20120(a) and (b) of the act, if applicable, or section 21304(a) of the act, if applicable.

(3) If the Department determines there is a change in groundwater quality from a normal operating baseline that indicates the concentration of a substance in groundwater may exceed an applicable limit, then the discharger shall take the following actions if required by the Department:
(a) Change the monitoring program, including increasing the frequency of effluent sampling or groundwater sampling, or both.
(b) Review the operational or treatment procedures, or both, at the facility.

ATTACHMENT II

MONITOR WELL INSTALLATION

Casing Materials
The selection of appropriate materials for monitoring well casing must take into account several site specific factors including the following: (1) geologic environment, (2) natural geochemical environment, (3) anticipated well depth, (4) types and concentrations of discharge parameters, and (5) design life of the monitoring well. Materials that are commonly used for monitoring wells in this program are PVC, galvanized and stainless steel.

Well Diameter
The diameter of the casing for a monitoring well is generally selected to accommodate downhole equipment. Additional casing diameter selection criteria include the following: (1) drilling or well installation method used, (2) anticipated depth of the well and associated strength requirements, (3) ease of well development, (4) volume of water required to be purged prior to sampling, and (5) rate of recovery of the well after purging. Generally, a two-inch inside diameter well casing is acceptable.

Screen Size and Length
The screen design must accommodate varying physical and chemical characteristics. Screens with the following characteristics provide the best service in most geological conditions: (1) Slot openings should be continuous around the circumference of the screen, permitting maximum accessibility to the aquifer so that efficient development is possible. (2) Slot openings should be spaced to provide maximum open area consistent with strength requirements to take advantage of the aquifer hydraulic conductivity. (3) Screens must be sufficiently strong to withstand stresses normally encountered during and after installation. In addition, the slot size of the well screen should be determined relative to the grain size analysis of the stratum interval to be monitored and the gradation of the filter pack material. This is most commonly done with a sieve analysis. In most circumstances, the use of a ten-slot well screen is acceptable.

Screen length should be adequate to supply enough water to obtain a representative sample. However, it should not be of such length that a diluted sample is collected. It should be noted that screening over much of the aquifer thickness could contribute to vertical movement of the parameters of concern. A screen length of three to five feet is appropriate in most cases.

Well Screen Packing
Once the well is in place, the screen should be surrounded by materials that are coarser, have a uniform grain size, and have a higher permeability than natural formation material. This allows groundwater to flow freely into the well from the adjacent formation material while minimizing or eliminating the entrance of fine-grained materials.

This can be accomplished by designing the well in such a way that either the natural coarse-grained formation materials or artificially introduced coarse-grained materials, in conjunction with appropriately sized well screen openings, retain the fine materials outside the well while permitting water to enter. Thus, there are two types of wells and well intake designs; naturally developed wells and wells with an artificially introduced filter pack.

In natural development, a highly permeable zone is created around the screen from materials existing in the formation (see discussion below). In filter packing, a specially graded sand or gravel having high porosity and permeability is placed in the annulus between the screen and the natural formation.

Annular Seals
Any annular space that is produced as the result of the installation of well casing in a borehole provides a channel for vertical movement of water and/or contaminants unless the space is sealed. The seal serves several purposes: (1) to provide protection against infiltration of surface water and potential contaminants, (2) to seal off discrete sampling zones, and (3) to prohibit vertical migration of water.

The annular seal in a monitoring well is placed above the filter pack in the annulus between the borehole and the well casing. The annular seal may be comprised of several different types of permanent, stable, low-permeability materials including pelletized, granular or powdered bentonite, neat cement grout and combinations of both (ASTM D5092-90).

Surface Completion and Protective Measures
Two types of surface completions are common for groundwater monitoring wells:
(1) aboveground completion and (2) flush-to-ground surface completion. An aboveground completion is preferred whenever practical. The primary purposes of either type of completion are to prevent surface runoff from entering and infiltrating down the annulus of the well and to protect the well from accidental damage or vandalism.

Whichever type of completion is selected for a well, there should always be a surface seal of neat cement or concrete surrounding the well casing and filling the annular space between the casing and the borehole at the surface.

A protective casing is generally installed around the well casing by placing the protective casing into the cement surface seal while it is still wet and uncured. The protective casing discourages unauthorized entry into the well and prevents damage by contact with vehicles. This outer casing should be kept locked between sampling events. Like the inner well casing, the outer protective casing should be vented near the top to prevent the accumulation and entrapment of potentially explosive gases and to allow water levels in the well to respond naturally to barometric pressure changes.

Well Development
Well development has two broad objectives: (1) Repair damage done to the formation by the drilling operation so that the natural hydraulic properties are restored. (2) Alter the basic physical characteristics of the aquifer near the borehole so that water will flow more freely to the well. All new wells should be developed before being put into use. In addition, older wells often require periodic redevelopment.

Effective development procedures should cause reversals of flow through the screen openings that will agitate the sediment, remove the finer fraction, and then rearrange the remaining formation particles. Examples of methods that apply this principle are backwashing and mechanical surging. Using a bailer or one directional pumping to develop a well is not acceptable.

AQUIFER TESTING

Water Level Measurement

Static water levels should be accurate to 0.01 feet. The basic water level measuring device is a steel tape typically coated with ordinary carpenter's chalk. This is the simplest water level measuring device. Other water level measuring devices include pressure transducers and electric sensors. Pressure transducers are suspended in the well on a cable and measure the height of water above the transducer center. Electric sensors are suspended on the end of a marked cable. When the sensor encounters conductive fluid, the circuit is completed and an audible or visual signal is displayed at the surface. All measurements should be related to a known USGS datum, which should be measured from a clearly identified location on each casing.

Horizontal Hydraulic Conductivity

In order to determine the horizontal hydraulic conductivity of the aquifer, either a pump test or a slug injection or recovery test will need to be performed. Pumping tests are typically performed in wells with a high transmissivity and in wells with a diameter large enough to accommodate the pumping equipment. Nearby observation wells are required to measure aquifer response. Slug injections or recovery tests that add or remove smaller amounts of water are typically performed in formations with low transmissivity and can be conducted in a single, smaller diameter well.

Groundwater Sampling

Sampling of monitoring wells should generally be done by field personnel from the testing laboratory or by groundwater professionals. In general, a sample is taken only after the pH, electrical conductivity, and temperature of the water being pumped from the well has stabilized. The methodology used in the sampling procedure is critically important if the true chemical nature of the groundwater at the site is to be determined. Samples may not be representative of groundwater conditions for the following reasons:

1. The sample was taken from stagnant water in the well, which is usually different chemically from the water in the ground near the well bore.
2. The water sample was contaminated by residual sediment because the well was not developed properly.
3. The sample was taken so long after pumping began that it represents water far enough from the well site that the groundwater chemistry is not representative.
4. Release of carbon dioxide during pumping causes an increase in pH, which in turn may cause metallic ions to come out of solution.
5. Numerous chemical changes took place because the sample was oxidized during recovery.
6. Chemical residues in the pump or sampling equipment contaminated the water sample.
7. The sample was not preserved correctly, so chemical changes occurred in the sample during storage.

A wide variety of groundwater sampling devices is available to meet the requirements of a groundwater monitoring program. The method used should be tailored to fit the chemicals being monitored, the hydrogeologic situation, and the design of the monitoring wells. It is strongly recommended that samples be collected with either a bladder or a peristaltic pump. Bladder pumps are positive displacement devices that use a pulse of gas to push the sample to the surface. The gas does not come into contact with the sample and positive pressure is maintained at all times. A peristaltic pump draws fluid into the pump by a tube trapped between two rollers. It is the complete occlusion of the tube that makes this pump a positive displacement pump, preventing backflow and eliminating the need for check valves when the

pump is stationary. If another method is chosen to collect groundwater samples, the discharger must demonstrate to the Department how representative samples from the wells will be obtained.

Filtration and Preservation

For filtering dissolved inorganic samples (Table II), a 0.45 micron filter pore size should be used. Flush or rinse filter membranes and sample containers with laboratory grade water before use unless the equipment is already prewashed and rinsed. In addition, discard the first 150 milliliters of the sample that passes through the filter before filling sample containers.

Preserving samples retards biodegradation reactions, hydrolysis reactions, precipitation and coprecipitation reactions and sorption reactions. Sample preservation usually involves reducing or increasing pH by adding an acid or base preservative. Samples are also preserved by cooling them to 4°C. Add preservative to the container before or immediately after collecting the sample. **If a sample requires filtration, add preservative after filtration, not before.**

Table I

Volatile Organics
EPA Method 8260 Plus

Parameter	Detection Limits (ug/l)	Groundwater Limit Rule 2227**	Groundwater Limit Rule 2228**
Acrylonitrile	1		1
Benzene	1		1
Bromochloromethane	1		1
Bromodichloromethane	1		1
Bromoform	1		1
Bromomethane	5		5
2-Butanone (MEK)	(5)	450	
Carbon Disulfide	5		5
Carbon Tetrachloride	1		1
Chlorobenzene	1		1
Chloroethane	5		5
Chloroform	1		1
Chloromethane	5		5
Dibromochloromethane	1		1
1,2-Dibromo-3-chloropropane	5		5
Dibromomethane	1		1
1,2-Dibromoethane	1		1
1,2-Dichlorobenzene	1	25	
1,3-Dichlorobenzene	1	25	
1,4-Dichlorobenzene	1	15	
1,4-Dichloro-2 butene (trans)	1		1
Dichlorodifluoromethane	5		40
1,1-Dichloroethane	1		1
1,2-Dichloroethane	1		1
1,1-Dichloroethylene	1		1
1,2-Dichloroethene (cis)	1	5	
1,2-Dichloroethene (trans)	1	5	
1,2-Dichloropropane	1		1
1,3-Dichloroproprene (cis)	1		1
1,3-Dichloroproprene (trans)	1		1
Diethyl ether	10		10
Ethylbenzene	1	25	
Hexachloroethane	1	25	

Table I
(continued)

Volatile Organics
EPA Method 8260 Plus

Parameter	Detection Limits (ug/l)	Groundwater Limit Rule 2227**	Groundwater Limit Rule 2228**
2-Hexanone	5		5
Isopropylbenzene	1		1
Methyl Iodide	1		1
Methylene Chloride	(5)		(5)
2-Methylnaphthalene	5		5
4-Methyl-2 propanone (MIBK)	5		5
Methyl Tertiary Butyl Ether (MTBE)	5		5
Naphthalene	5	15	
2-Propanone (acetone)	25		25
n-Propylbenzene	1		1
Styrene	1	20	
1,1,1,2-Tetrachloroethane	1		1
1,1,2,2-Tetrachloroethane	1		1
Tetrachloroethylene	1		1
Toluene	1	35	
1,1,1-Trichloroethane	1	15	
1,2,4-Trichlorobenzene	5	15	
1,1,2-Trichloroethane	1		1
Trichloroethylene	1		1
Trichlorofluoromethane	5		5
1,2,3-Trichloropropane	1		1
1,2,4-Trimethylbenzene	1		1
1,3,5-Trimethylbenzene	1		1
Vinyl Chloride	1		1
o-Xylene	1	35	
M & p-Xylene	2	35	

( ) = Detection limit dependent upon laboratory background level

* The total of all Trihalomethanes, **Bromodichloromethane, Bromoform, Chloroform and Dibromochloromethane** must be less than 20 ug/l.

** Rule 2227 and Rule 2228 deal with compliance actions that must be followed in the event a permit limit is exceeded in either the effluent or the groundwater.

-- Currently there are no Part 201 Residential Criteria for this substance.

Table II

Metals

Groundwater parameters and detection limits

Parameter	Groundwater Detection Limits (ug/l)	Parameter	Groundwater Detection Limits (ug/l)
Aluminum	50	Lithium	8
Antimony	1	Manganese	5
Arsenic	1	Mercury	0.2
Barium	5	Molybdenum	25
Beryllium	1	Nickel	2
Boron	20	Selenium	1
Cadmium	0.2	Silver	0.5
Chromium	1	Strontium	5
Chromium VI	5	Titanium	10
Cobalt	2	Thallium	2
Copper	1	Vanadium	10
Lead	1	Zinc	4

These substances should be analyzed as dissolved for reporting groundwater results.

Table III

Inorganics

Groundwater parameters and detection limits

Parameter	Groundwater Detection Limits (ug/l)
Nitrate as N	10
Nitrite as N	10
Ammonia as N	10
Chloride	1000
Sodium	1000
Total Phosphorus	10